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ВИМІРЮВАННЯ ТА ПОКАЗНИКИ ЯКОСТІ В ТЕХНІЧНИХ ЗАКЛАДАХ

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MEASUREMENTS AND INDICATORS OF QUALITY IN TECHNICAL INSTITUTIONS

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Анотація. Важливе питання стає якість у сфері освіти. Показники та вимірювання якості освіти забезпечують важливу підтримку для визначення кількох аспектів у навчальних центрах. Відсутність якісних знань та культури, брак робочого процесу та оцінки є основними перешкодами для вдосконалення в технічних навчальних закладах. Більш того, більш глибокі дослідження та дослідження користуються великим попитом. Через нагальну потребу в якісному застосуванні в технічних навчальних закладах; ці установи не відповідають перспективам якості внаслідок відсутності стратегічного планування, чіткого механізму відбору функцій керівництва. Крім того, існує брак структури управління. Метою даного дослідження є вивчення поточної позиції технічних навчальних закладів у великому районі Тріполі з травня по листопад 2017 р. З точки зору показників якості та вимірювань, а також впровадження системи якості в цих установах. Дослідження базується на зборі та аналізі даних, наданих кафедрою технічної та професійної освіти. Ця робота була проведена для встановлення та впровадження системи якості у навчально-технічних навчальних закладах. Робота вимагала проведення досліджень галузі досліджень для таких установ, щоб визначити основні аспекти підвищення якості відділів технічної освіти щодо затверджених вимірювань та показників. Ця робота також є наріжним каменем для майбутнього планування впровадження системи якості в установах технічної освіти.

Ключові слова: якість, технічні навчальні заклади, показники якості та вимірювання.

Формул.: 0; рис.: 8, табл.: 2, бібл.: 10

Anotation. Quality in education become an important issue. Indicators and measurements to quality in education provide crucial support to determine several aspects in educational centres. Lack of quality knowledge and culture, lack in working process and evaluation are the main barriers to improvement in the technical educational institutions. Moreover, more deep studies and researches are highly in demand. Due to urgent need to quality application in technical educational institutions; these institutions are not appropriate to the vision of quality as a result of absence of strategic planning, clear mechanism for leadership functional selection. Furthermore there is lack in management structure itself.

The aim of this study is to investigate the current position of technical educational institutions within greater Tripoli area from May to November/ 2017, in terms of the quality indicators, and measurements as well as implementation of quality system in these institutions. The study is based on collecting and analysing data provided by the department of technical and vocational education. This work has been carried out to establish and implement a quality system in technical educational institutions. The work required an investigation of the area of research for such institutions to identify main aspects of enhancing quality departments in technical education regarding to approved measurements and indicators. This work also is a corner stone for future planning to implement the quality system in technical education institutions.

Key words: Quality, Technical Educational Institutions, quality indicators, and measurements.

Formulas: 0; fig.: 8, tabl.: 2, bibl.: 10

Stating the problem. Due to urgent need to quality application in technical educational institutions; these institutions are not appropriate to the vision of quality as a result of absence of strategic planning, clear mechanism for leadership functional selection. Furthermore there is lack in management structure itself.

Analysis of previous research. Quality in education become an important issue. Indicators and measurements to quality in education provide crucial support to determine several aspects in educational centres. These Indicators and measurements may include study program objectives and tasks, teaching and learning, student's achievements, teacher's progress, learning environment, availability in resources, as well as leadership and administration [1]. Information can be classified into descriptive and prescriptive [2]. Evaluating quality in education is sophisticated process. Quality in higher education can be measured by considering certain parameters or indicators; like examination results, facilities and activities [3]. Quality in education is roughly new concept instead of old education efficiency. In higher educational institutions like technical colleges, important decisions advised to be taken upon data and information

analysis that have been obtained from pre-prepared measures [4]. Deferent methods to measure quality in higher educational institution have been studied. Measuring indicators involve different characteristics; they are quantitative and work as functional monitor [5]. Many countries have paid high attention to quality assessment and evaluation where quality is a customer focus [6]. Implementation of internal quality assurance system at a technical institution contains the forming standards, procedures, and instructions [7]. Quality analysis relates to the ability to critically analyse the processes of quality development [8]. Quality in educational process is assessment criteria of requirements such as; tools, lecturers, teaching results, and needs. Quality in education is the skill of building and implementing the abilities of using the knowledge in the area [9]

Unsolved part of the problem. Lack of quality knowledge and culture, lack in working process and evaluation are the main barriers to improvement in the technical educational institutions. Moreover, more deep studies and researches are highly in demand.

Main research material. The work was accomplished via several stages framework as illustrated in figure 1.

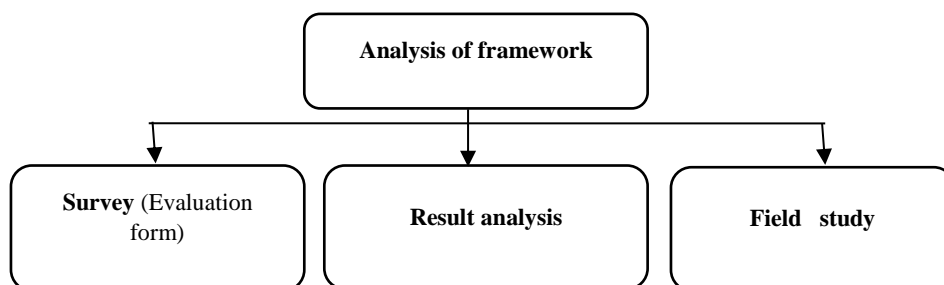


Figure 1. Framework stages

Source: compiled by authors

According to previous framework, a descriptive analysis of collected data including analysis of indicators has been carried out.

Table 1, shows the statistics collected from the field survey of each institution which

indicate the numbers of educational departments and personnel.

Upcoming results represent realistic data which are important to identify barriers, advantages, disadvantages that affect planning and processing operations.

Table 1

Statistics for each institution

Institutes	No. of sections	Faculty members	Associate faculty members	Associate members	Trainers	Employees	Students
Higher Institute of Sciences and Technology(HIST1)	5	26	31	14	49	57	774
Higher Institute of Sciences and Technology(HIST2)	5	53	18	28	59	111	1673
Higher Institute of Agricultural Technology(HIAT)	8	65	27	21	48	326	602
Higher Institute of Industrial Technology(HIIT)	6	52	70	38	52	92	1028
Higher Institute of Engineering Technology(HIET)	8	93	18	45	82	180	1691
Higher Institute of Arts Technology(HIAT)	5	22	13	36	56	107	527
Higher Institute of Medical Sciences and Technology(HIMST1)	8	26	48	46	10	100	780
College of Applied Administrative and Financial Sciences(CAAFS)	3	57	88	1	2	55	2033
College of Engineering Technology(CEnT)	5	129	48	40	59	97	2000
Higher Institute of Sciences and Technology(HIST3)	5	42	25	32	29	78	284
College of Tourism and Hospitality(CTH)	2	10	26	0	22	55	297
Higher Institute of Medical Sciences and Technology(HIMST2)	7	72	51	156	80	173	3333
Higher Institute of Sciences and Technology(HIST4)	5	73	11	72	0	115	511
College of Computer Technology(HICT)	3	32	47	13	14	96	1679
College Of Electronic Technology(CET)	3	59	77	11	42	114	1105
Total	78	811	598	553	604	1756	18317

Source: constructed by authors

From table 1, some vital fields have direct impact to the institutional performances as follows in figures 2, 3, and 4.

Figure 2, reveals the fluctuation in different departments within these institutions. The variance in departments require re-organising of the required departments regarding job needs.

Likely, figure 3, represents the number of employees indicating the variance to the number of students.

Followed in figure 4, the distinguishing between the number of full time and part time staff is exposed.

Re-evaluating of empowering process is required for institutions training.

As overall summary of previous figures; we conclude that technical educational institutions

undergo a bulk of challenges and difficulties. These problems reveal the following:

Resistance to change.

Lack in organisation structure and job description.

Lack of motivation and lack of training.

Lack of self-evaluation methods regarding approved specifications.

Analysis of indicators:

One of the most essential part is to convert obtained results and achieved knowledge into working plans to help with quality in technical educational institutions.

Regarding the sheet forms of evaluation and selected quality indicators, the percentage value of each indicator was calculated to explain the availability of implementing such indicator in the institution.

Table 2, and figure 5, reveal the results of evaluating values in general as well as average percentage for each indicator in series.

The findings of the previous results can lead to real description for better development and performance improvement according to the quality parameters in such fields as illustrated in figure 6.

A group of parameters for each indicator is set to determine the planned objectives in values. Upcoming figure 7, is made to show these indicators and their criteria.

Throughout implementation of last indicators, we understand that technical institutions have a tremendous gaps in application of quality.

Based on field investigation results we found the current situation belong technical educational institutions are in shortage of quality standarads; therefore, some field steps to be taken into account to develop and improve the level of performance as illustrated in following figure 9.

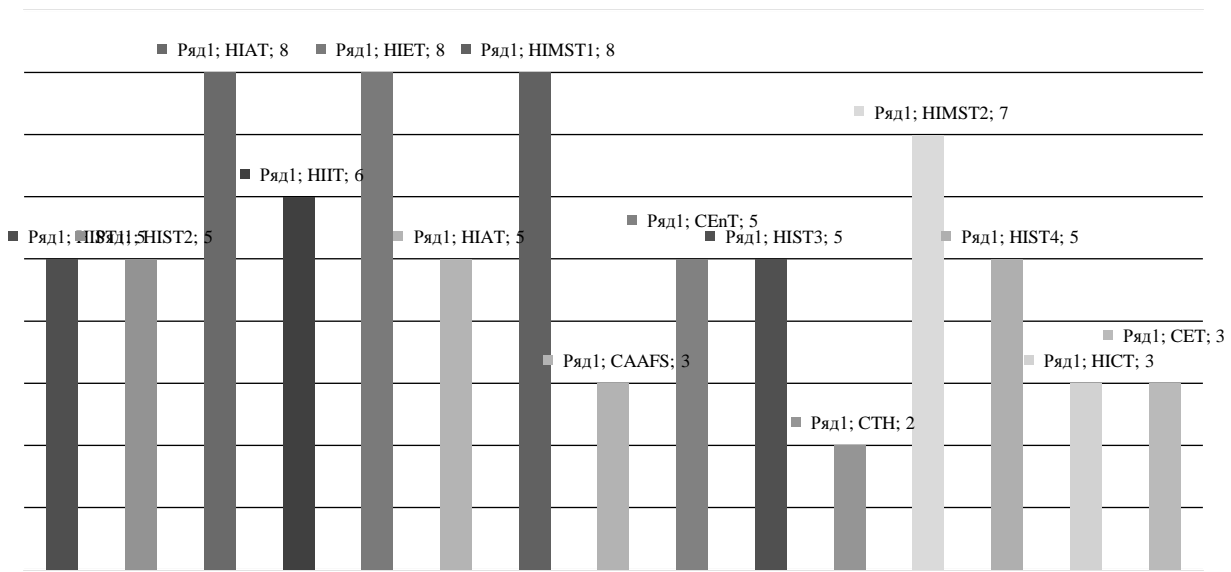


Figure 2. Number of departments in technical education institutions

Source: made by authors

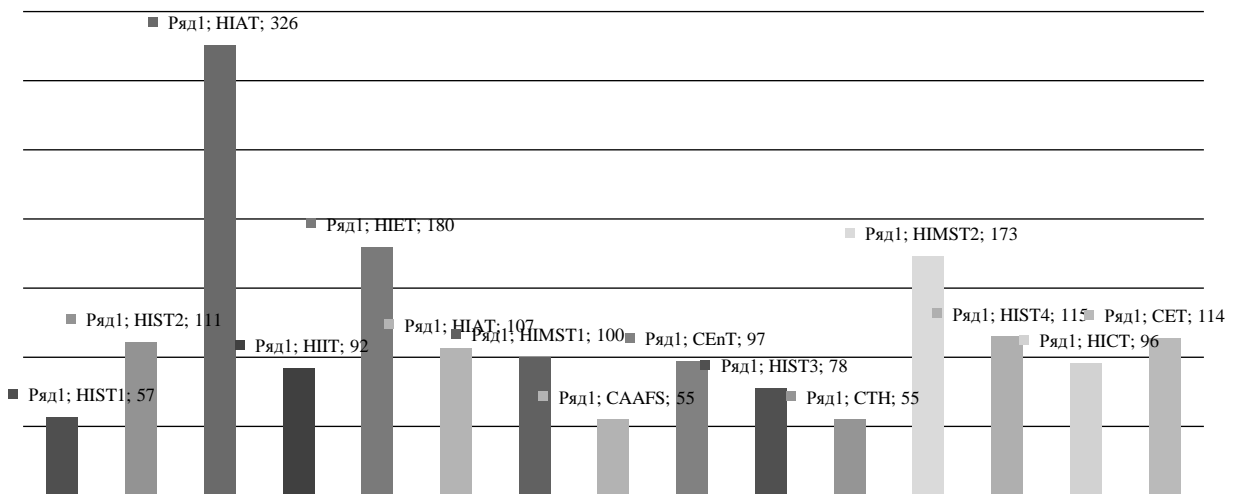


Figure 3. Number of employees in technical education institutions

Source: made by authors

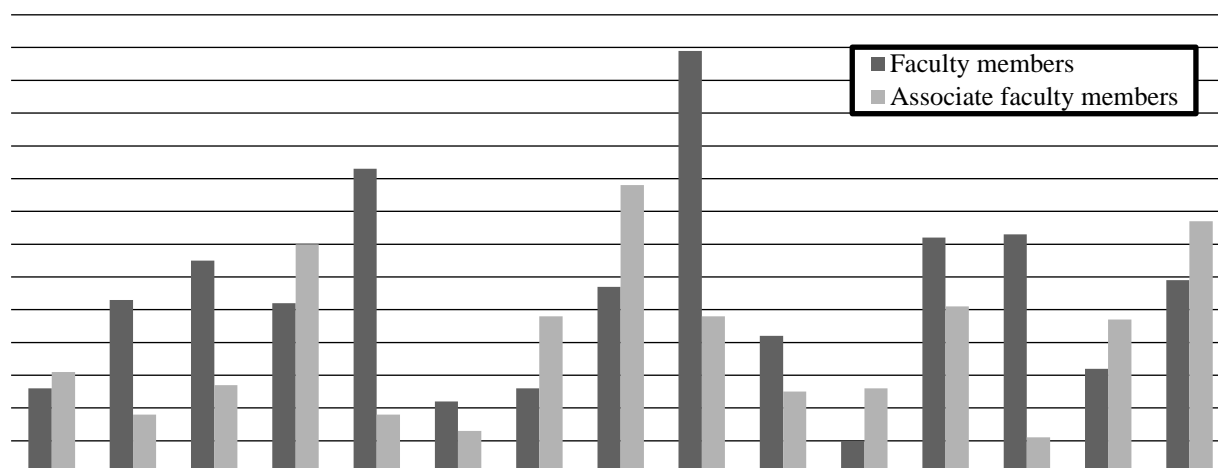


Figure 4. Number of Faculty members and Associate faculty members

Source: made by authors

Table 2

Results of evaluating values and average percentage for each indicator

Institutes	Quality Criteria									Total
	Planning	Leadership & governance	Educational programs	Faculty	Student Affairs	Facilities and Services	Scientific Research	Community Service	The quality	
Higher Institute of Sciences and Technology(HIST1)	0%	9%	9%	14%	11%	50%	0%	17%	4%	13%
Higher Institute of Sciences and Technology(HIST2)	25%	13%	9%	18%	28%	50%	5%	17%	4%	19%
Higher Institute of Agricultural Technology(HIAT)	5%	16%	13%	18%	21%	19%	25%	0%	4%	13%
Higher Institute of Industrial Technology(HIIT)	15%	50%	16%	18%	32%	56%	5%	8%	8%	23%
Higher Institute of Engineering Technology(HIET)	30%	28%	6%	25%	4%	25%	10%	0%	4%	15%
Higher Institute of Arts Technology(HIAT)	0%	19%	6%	7%	18%	59%	25%	8%	4%	16%
Higher Institute of Medical Sciences and Technology(HIMST1)	5%	16%	3%	7%	11%	31%	5%	8%	4%	10%
College of Applied Administrative and Financial Sciences(CAAFS)	45%	47%	25%	33%	46%	71%	20%	17%	8%	35%
College of Engineering Technology(CEnT)	15%	13%	13%	11%	18%	9%	5%	8%	4%	11%
Higher Institute of Sciences and Technology(HIST3)	0%	9%	3%	11%	11%	13%	10%	8%	8%	8%
College of Tourism and Hospitality(CTH)	15%	16%	38%	4%	14%	31%	5%	8%	4%	15%
Higher Institute of Medical Sciences and Technology(HIMST2)	5%	13%	3%	11%	11%	22%	5%	8%	4%	9%
Higher Institute of Sciences and Technology(HIST4)	0%	16%	4%	14%	7%	13%	5%	8%	4%	8%
College of Computer Technology(HICT)	0%	22%	13%	14%	14%	63%	5%	8%	13%	17%
College Of Electronic Technology(CET)	0%	9%	9%	14%	7%	41%	5%	8%	4%	11%
Total	11%	20%	11%	15%	17%	37%	9%	9%	5%	15%

Source: constructed by authors

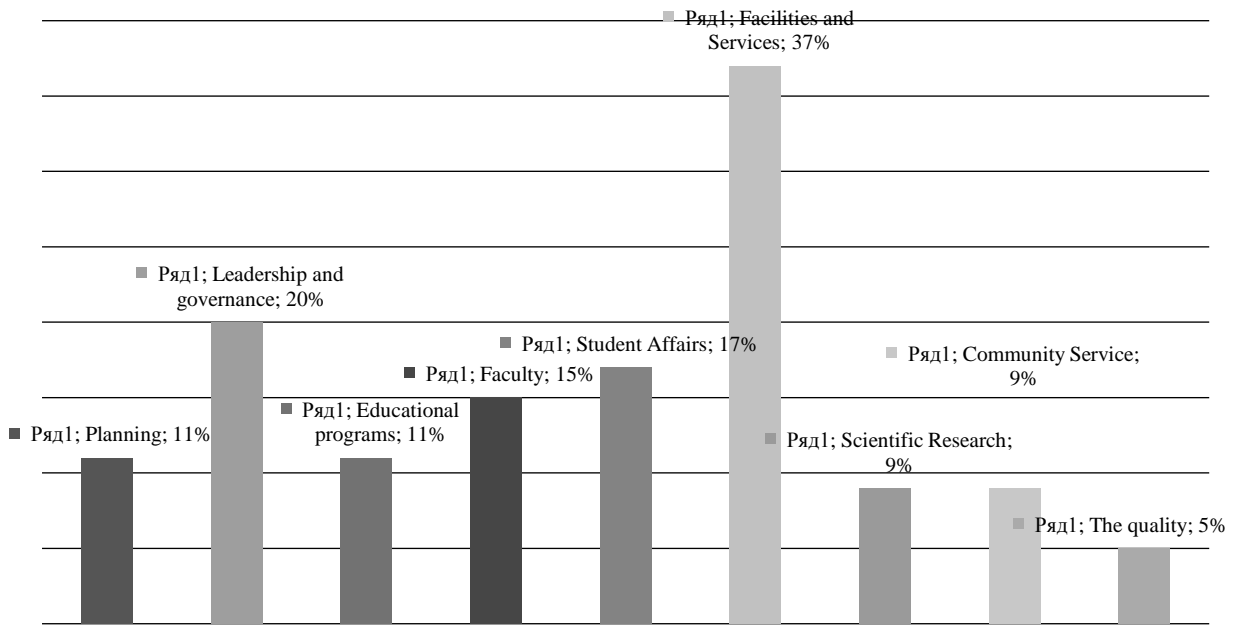


Figure 5. General outline of accreditation criteria for the targeted institutes

Source: made by authors

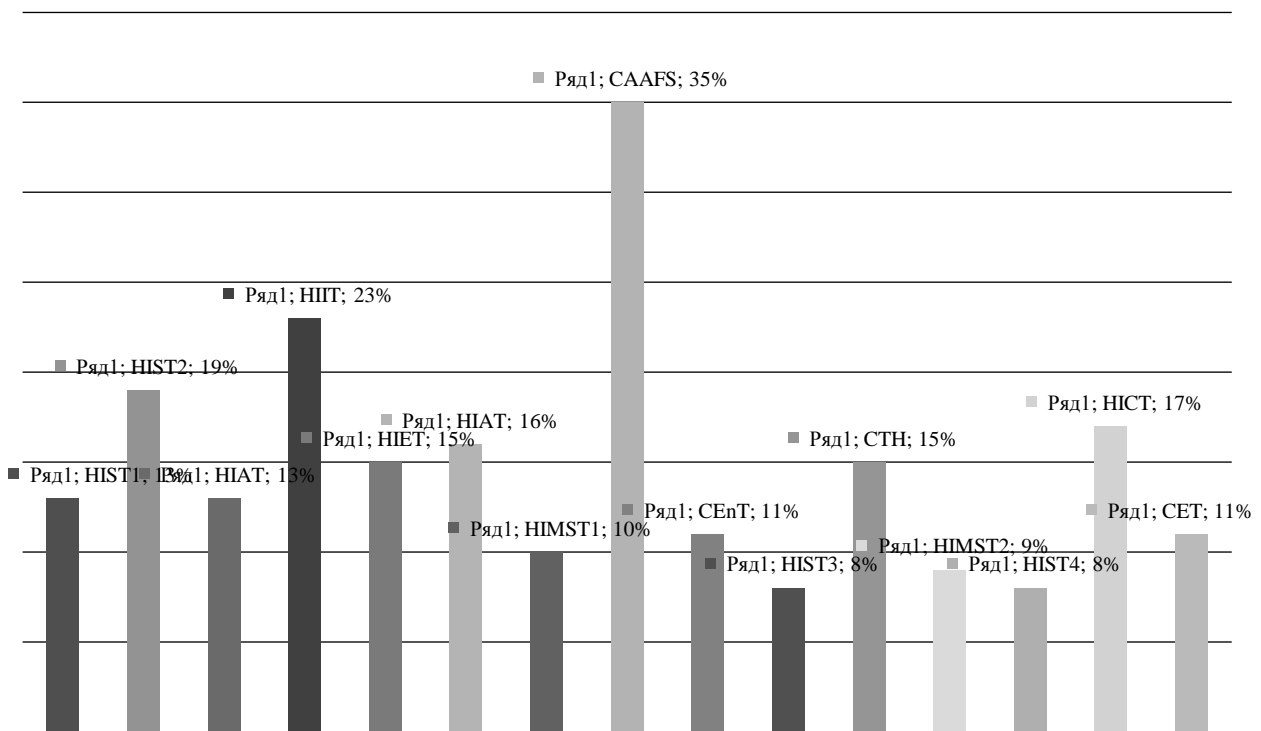


Figure 6. Total results of evaluation

Source: made by authors

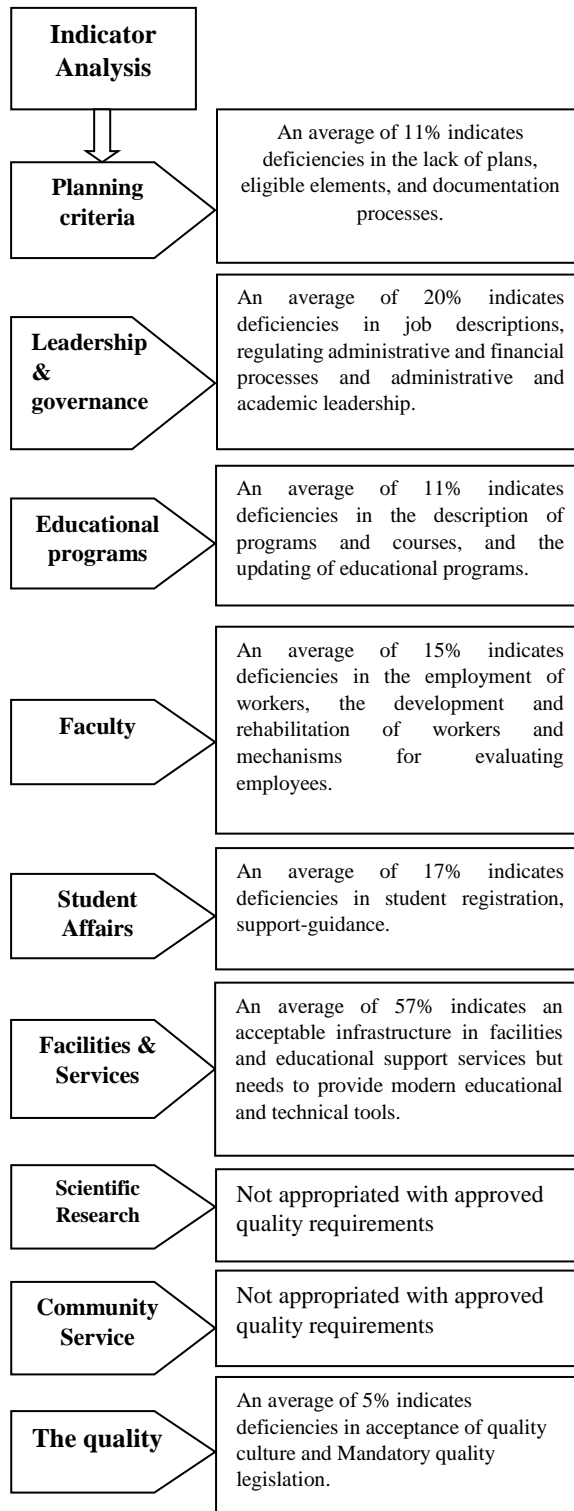


Figure 7. Analysis of indicators

Source: compiled by authors

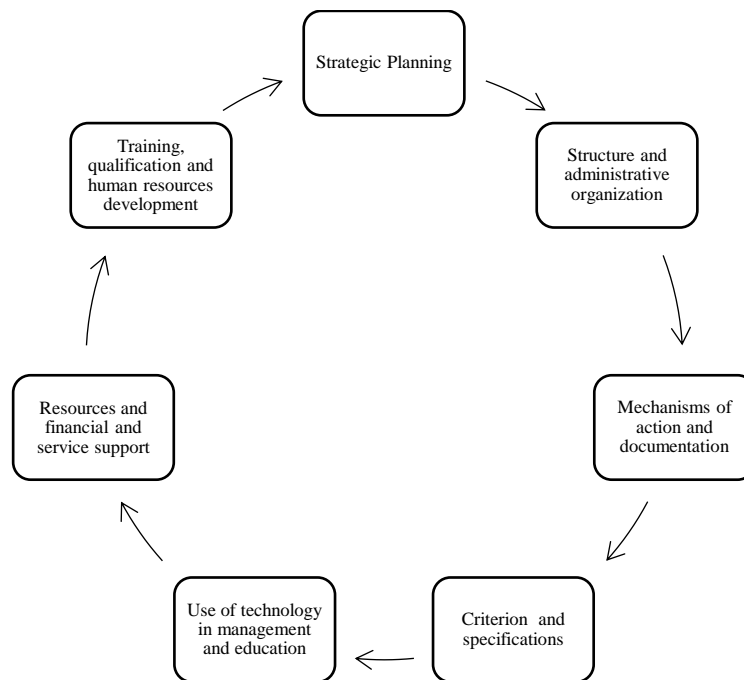


Figure 8. Important fields of procedures

Source: compiled by authors

These operations in several survey fields were done to achieve final conclusion of quality progression and improvement. The work was done in parallel whereas the results were taken as a total of all together.

Conclusions. This work has been carried out to establish and implement a quality system in technical educational institutions. The work required an investigation of the area of research for such institutions to identify main aspects of enhancing quality departments in technical education regarding to approved measurements and indicators. This work also is a corner stone for future planning to implement the quality system in technical education institutions.

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